IN THE CLAIMS

Claim 1 (Previously Presented). A method for treating the effects of low LDL-cholesterol values in the brain on cognitive performance or other central nervous system functions by modulating nicotinic receptors by administering an effective amount of a nicotinic allosteric potentiator, an acetylcholinesterase inhibitor, nicotine, a nicotinic agonist or a mixture thereof to a patient in need of such modulation.

Claim 2 (Previously Presented). A method as claimed in claim 1 wherein said low cholesterol values are values of less than 109 mg/dl LDL-cholesterol.

Claim 3 (Previously Presented). A method as claimed in claim 1 wherein said low cholesterol values are the result of treatment with HMG-CoA reductase inhibitors.

Claim 4 (Previously Presented). A method as claimed in claim 1 wherein said modulation of nicotinic receptors is effected by administering an effective amount of a galanthamine or lycoramine analog to a patient in need of such modulation.

Claim 5 (Previously Presented). A method as claimed in claim 2 wherein said modulation of nicotinic receptors is effected by administering an effective amount of a galanthamine or lycoramine analog to a patient in need of such modulation.

Claim 6 (Previously Presented). A method as claimed in claim 3 wherein said modulation of nicotinic receptors is effected by administering an effective amount of a galanthamine or lycoramine analog to a patient in need of such modulation.

Claim 7 (Previously Presented). A method as claimed in claim 4 wherein said analog of galanthamine or lycoramine is one wherein at least one of the methoxy, hydroxy or methyl groups of galanthamine or lycoramine is replaced as follows:

the methoxy group by another alkoxy group of from one to six carbon atoms, a hydroxy group, hydrogen, an alkanoyloxy group, a benzoyloxy or substituted benzoyloxy group, a carbonate group or a carbamate group or a trialkylsilyloxy group;

the hydroxy group by an alkoxy group of from one to six carbon atoms, hydrogen, an alkanoyloxy group, a benzoyloxy or substituted benzoyloxy group, a carbonate group or a carbamate group;

the N-methyl group by hydrogen, alkyl, benzyl, cyclopropylmethyl group or a substituted or unsubstituted benzoyloxy group.

Claim 8 (Previously Presented). A method as claimed in claim 5 wherein said analog of galanthamine or lycoramine is one wherein at least one of the methoxy, hydroxy or methyl groups of galanthamine or lycoramine is replaced as follows:

the methoxy group by another alkoxy group of from one to six carbon atoms, a hydroxy group, hydrogen, an alkanoyloxy group, a benzoyloxy or substituted benzoyloxy group, a carbonate group or a carbamate group or a trialkylsilyloxy group;

the hydroxy group by an alkoxy group of from one to six carbon atoms, hydrogen, an alkanoyloxy group, a benzoyloxy or substituted benzoyloxy group, a carbonate group or a carbamate group;

the N-methyl group by hydrogen, alkyl, benzyl, cyclopropylmethyl group or a substituted or unsubstituted benzoyloxy group.

Claim 9 (Previously Presented). A method as claimed in claim 6 wherein said analog of galanthamine or lycoramine is one wherein at least one of the methoxy, hydroxy or methyl groups of galanthamine or lycoramine is replaced as follows:

the methoxy group by another alkoxy group of from one to six carbon atoms, a hydroxy group, hydrogen, an alkanoyloxy group, a benzoyloxy or substituted benzoyloxy group, a carbonate group or a carbamate group or a trialkylsilyloxy group;

the hydroxy group by an alkoxy group of from one to six carbon atoms, hydrogen, an alkanoyloxy group, a benzoyloxy or substituted benzoyloxy group, a carbonate group or a carbamate group;

the N-methyl group by hydrogen, alkyl, benzyl, cyclopropylmethyl group or a substituted or unsubstituted benzoyloxy group.

Claim 10 (Previously Presented). A method as claimed in claim 4 wherein any alkanoyloxy, carbamate and carbonate group present contains up to ten carbon atoms.

Claim 11 (Previously Presented). A method as claimed in claim 5 wherein any alkanoyloxy, carbamate and carbonate group present contains up to ten carbon atoms.

Claim 12 (Previously Presented). A method as claimed in claim 6 wherein any alkanoyloxy, carbamate and carbonate group present contains up to ten carbon atoms.

Claim 13 (Previously Presented). A method as claimed in claim 4 wherein any of said alkanoyloxy, carbamate or carbonate group comprises an alkyl or alkoxy group of from 1 to 6 carbon atoms optionally substituted by one or more halo groups.

Claim 14 (Previously Presented). A method as claimed in claim 5 wherein any of said alkanoyloxy, carbamate or carbonate group comprises an alkyl or alkoxy group of from 1 to 6 carbon atoms optionally substituted by one or more halo groups.

Claim 15 (Previously Presented). A method as claimed in claim 6 wherein any of said alkanoyloxy, carbamate or carbonate group comprises an alkyl or alkoxy group of from 1 to 6 carbon atoms optionally substituted by one or more halo groups.

Claim 16 (Previously Presented). A method as claimed in claim 4 wherein said analog is a galanthamine analog.

Claim 17 (Previously Presented). A method as claimed in claim 5 wherein said analog is a galanthamine analog.

Claim 18 (Previously Presented). A method as claimed in claim 6 wherein said analog is a galanthamine analog.

Claim 19 (Previously Presented). A method as claimed in claim 4 wherein said analog is a lycoramine analog.

Claim 20 (Previously Presented). A method as claimed in claim 5 wherein said analog is a lycoramine analog.

Claim 21 (Previously Presented). A method as claimed in claim 6 wherein said analog is a lycoramine analog.

Claim 22 (Previously Presented). A method as claimed in claim 4 wherein said analog is an n-butyl carbamate.

Claim 23 (Previously Presented). A method as claimed in claim 5 wherein said analog is an n-butyl carbamate.

Claim 24 (Previously Presented). A method as claimed in claim 6 wherein said analog is an n-butyl carbamate.

Claim 25 (Previously Presented). A method as claimed in claim 4 wherein the methoxy group of galanthamine or lycoramine is replaced by a hydrogen, hydroxy or alkoxy group of from two to six carbon atoms or an acyloxy group or a mono or dialkyl carbamate or carbonate group wherein the alkyl groups contain from 1 to 8 carbon atoms.

Claim 26 (Previously Presented). A method as claimed in claim 5 wherein the methoxy group of galanthamine or lycoramine is replaced by a hydrogen, hydroxy or alkoxy group of from two to six carbon atoms or an acyloxy group or a mono or dialkyl carbamate or carbonate group wherein the alkyl groups contain from 1 to 8 carbon atoms.

Claim 27 (Previously Presented). A method as claimed in claim 6 wherein the methoxy group of galanthamine or lycoramine is replaced by a hydrogen, hydroxy or alkoxy group of from two to six carbon atoms or an acyloxy group or a mono or dialkyl carbamate or carbonate group wherein the alkyl groups contain from 1 to 8 carbon atoms.

Claim 28 (Previously Presented). A method as claimed in claim 4 wherein the hydroxy group of galanthamine or lycoramine is replaced by an alkoxy group of from one to six carbon atoms, hydrogen, an acyloxy group, a carbonate group or a carbamate group which may be a mono or dialkyl or an aryl carbamate or carbonate wherein the alkyl groups contain from 1 to 8 carbon atoms.

Claim 29 (Previously Presented). A method as claimed in claim 5 wherein the hydroxy group of galanthamine or lycoramine is replaced by an alkoxy group of from one to six carbon atoms, hydrogen, an acyloxy group, a carbonate group or a carbamate group which may be a mono or dialkyl or an aryl carbamate or carbonate wherein the alkyl groups contain from 1 to 8 carbon atoms.

Claim 30 (Previously Presented). A method as claimed in claim 6 wherein the hydroxy group of galanthamine or lycoramine is replaced by an alkoxy group of from one to six carbon atoms, hydrogen, an acyloxy group, a carbonate group or a carbamate group which may be a mono or dialkyl or an aryl carbamate or carbonate wherein the alkyl groups contain from 1 to 8 carbon atoms.

Claim 31 (Previously Presented). A method as claimed in claim 4 wherein the compound employed is one wherein the hydroxyl group of galanthamine or lycoramine is replaced by an alkanoyl group of 2 to 7 carbon atoms, a mono or dialkyl carbamate of 1 - 8 carbon atoms per alkyl group, a mono or diaryl carbamate, an alkyl carbonate of one to six carbon atoms in its alkyl group or an aryl carbonate.

Claim 32 (Previously Presented). A method as claimed in claim 5 wherein the compound employed is one wherein the hydroxyl group of galanthamine or lycoramine is replaced by an alkanoyl group of 2 to 7 carbon atoms, a mono or dialkyl carbamate of 1 - 8 carbon atoms per alkyl group, a mono or diaryl carbamate, an alkyl carbonate of one to six carbon atoms in its alkyl group or an aryl carbonate.

Claim 33 (Previously Presented). A method as claimed in claim 6 wherein the compound employed is one wherein the hydroxyl group of galanthamine or lycoramine is replaced by

an alkanoyl group of 2 to 7 carbon atoms, a mono or dialkyl carbamate of 1 – 8 carbon atoms per alkyl group, a mono or diaryl carbamate, an alkyl carbonate of one to six carbon atoms in its alkyl group or an aryl carbonate.

Claim 34 (Previously Presented). A method as claimed in claim 4 wherein the compound employed is one wherein the methoxy group of galanthamine or lycoramine is replaced by an alkoxy group of two to six carbon atoms or a carbonate of from one to six carbon atoms an alkyl carbonate of one to six carbon atoms in its alkyl group or an aryl carbonate.

Claim 35 (Previously Presented). A method as claimed in claim 5 wherein the compound employed is one wherein the methoxy group of galanthamine or lycoramine is replaced by an alkoxy group of two to six carbon atoms or a carbonate of from one to six carbon atoms an alkyl carbonate of one to six carbon atoms in its alkyl group or an aryl carbonate.

Claim 36 (Previously Presented). A method as claimed in claim 6 wherein the compound employed is one wherein the methoxy group of galanthamine or lycoramine is replaced by an alkoxy group of two to six carbon atoms or a carbonate of from one to six carbon atoms an alkyl carbonate of one to six carbon atoms in its alkyl group or an aryl carbonate.

Claim 37 (Previously Presented). A method for treating neuromuscular dysfunction resulting from use of HMG-CoA reductase inhibitors by modulating nicotinic receptors by administering an effective amount of a nicotinic allosteric potentiator, nicotine, a nicotinic agonist or a mixture thereof to a patient in need of such modulation.

Claim 38 (New). A method as claimed in claim 1 wherein said modulation of nicotinic receptors is effected by administering an effective amount of galanthamine.

Claim 39 (New). A method as claimed in claim 37 wherein said modulation of nicotinic receptors is effected by administering an effective amount of galanthamine.

What is Claimed is

1. A method for treating the effects of low LDL-cholesterol values in the brain on cognitive performance or other central nervous system functions by modulating nicotinic receptors by administering an effective amount of a nicotinic allosteric potentiator, an acetylcholinesterase inhibitor, nicotine, a nicotinic agonist or a mixture thereof to a patient in need of such modulation.

2. A method as claimed in claim 1 wherein said low cholesterol values are values of less than 109 mg/dl LDL-cholesterol.

3. A method as claimed in claim 1 wherein said low cholesterol values are the result of treatment with HMG-CoA reductase inhibitors.

4. A method as claimed in claim 1 wherein said modulation of nicotinic receptors is effected by administering an effective amount of a galanthamine or lycoramine analog to a patient in need of such modulation.

5. A method as claimed in claim 2 wherein said modulation of nicotinic receptors is effected by administering an effective amount of a galanthamine or lycoramine analog to a patient in need of such modulation.

6. A method as claimed in claim 3 wherein said modulation of nicotinic receptors is effected by administering an effective amount of a galanthamine or lycoramine analog to a patient in need of such modulation.

7. A method as claimed in claim 4 wherein said analog of galanthamine or lycoramine is one wherein at least one of the methoxy, hydroxy or methyl groups of galanthamine or lycoramine is replaced as follows:

the methoxy group by another alkoxy group of from one to six carbon atoms, a hydroxy group, hydrogen, an alkanoyloxy group, a benzoyloxy or substituted benzoyloxy group, a carbonate group or a carbamate group or a trialkylsilyloxy group;

the hydroxy group by an alkoxy group of from one to six carbon atoms, hydrogen, an alkanoyloxy group, a benzoyloxy or substituted benzoyloxy group, a carbonate group or a carbamate group;

the N-methyl group by hydrogen, alkyl, benzyl, cyclopropylmethyl group or a substituted or unsubstituted benzoyloxy group.

8. A method as claimed in claim 5 wherein said analog of galanthamine or lycoramine is one wherein at least one of the methoxy, hydroxy or methyl groups of galanthamine or lycoramine is replaced as follows:

the methoxy group by another alkoxy group of from one to six carbon atoms, a hydroxy group, hydrogen, an alkanoyloxy group, a benzoyloxy or

substituted benzoyloxy group, a carbonate group or a carbamate group or a trialkylsilyloxy group;

the hydroxy group by an alkoxy group of from one to six carbon atoms, hydrogen, an alkanoyloxy group, a benzoyloxy or substituted benzoyloxy group, a carbonate group or a carbamate group;

the N-methyl group by hydrogen, alkyl, benzyl, cyclopropylmethyl group or a substituted or unsubstituted benzoyloxy group.

9. A method as claimed in claim 6 wherein said analog of galanthamine or lycoramine is one wherein at least one of the methoxy, hydroxy or methyl groups of galanthamine or lycoramine is replaced as follows:

the methoxy group by another alkoxy group of from one to six carbon atoms, a hydroxy group, hydrogen, an alkanoyloxy group, a benzoyloxy or substituted benzoyloxy group, a carbonate group or a carbamate group or a trialkylsilyloxy group;

the hydroxy group by an alkoxy group of from one to six carbon atoms, hydrogen, an alkanoyloxy group, a benzoyloxy or substituted benzoyloxy group, a carbonate group or a carbamate group;

the N-methyl group by hydrogen, alkyl, benzyl, cyclopropylmethyl group or a substituted or unsubstituted benzoyloxy group.

10. A method as claimed in claim 4 wherein any alkanoyloxy, carbamate and carbonate group present contains up to ten carbon atoms.

11. A method as claimed in claim 5 wherein any alkanoyloxy, carbamate and carbonate group present contains up to ten carbon atoms.

12. A method as claimed in claim 6 wherein any alkanoyloxy, carbamate and carbonate group present contains up to ten carbon atoms.

13. A method as claimed in claim 4 wherein any of said alkanoyloxy, carbamate or carbonate group comprises an alkyl or alkoxy group of from 1 to 6 carbon atoms optionally substituted by one or more halo groups.

14. A method as claimed in claim 5 wherein any of said alkanoyloxy, carbamate or carbonate group comprises an alkyl or alkoxy group of from 1 to 6 carbon atoms optionally substituted by one or more halo groups.

15. A method as claimed in claim 6 wherein any of said alkanoyloxy, carbamate or carbonate group comprises an alkyl or alkoxy group of from 1 to 6 carbon atoms optionally substituted by one or more halo groups.

16. A method as claimed in claim 4 wherein said analog is a galanthamine analog.

17. A method as claimed in claim 5 wherein said analog is a galanthamine analog.

18. A method as claimed in claim 6 wherein said analog is a galanthamine analog.

19. A method as claimed in claim 4 wherein said analog is a lycoramine analog.

20. A method as claimed in claim 5 wherein said analog is a lycoramine analog.

21. A method as claimed in claim 6 wherein said analog is a lycoramine analog.

22. A method as claimed in claim 4 wherein said analog is an n-butyl carbamate.

23. A method as claimed in claim 5 wherein said analog is an n-butyl carbamate.

24. A method as claimed in claim 6 wherein said analog is an n-butyl carbamate.

25. A method as claimed in claim 4 wherein the methoxy group of galanthamine or lycoramine is replaced by a hydrogen, hydroxy or alkoxy group of from two to six carbon atoms or an acyloxy group or a mono or dialkyl carbamate or carbonate group wherein the alkyl groups contain from 1 to 8 carbon atoms.

26. A method as claimed in claim 5 wherein the methoxy group of galanthamine or lycoramine is replaced by a hydrogen, hydroxy or alkoxy group of from two to

six carbon atoms or an acyloxy group or a mono or dialkyl carbamate or carbonate group wherein the alkyl groups contain from 1 to 8 carbon atoms.

27. A method as claimed in claim 6 wherein the methoxy group of galanthamine or lycoramine is replaced by a hydrogen, hydroxy or alkoxy group of from two to six carbon atoms or an acyloxy group or a mono or dialkyl carbamate or carbonate group wherein the alkyl groups contain from 1 to 8 carbon atoms.

28. A method as claimed in claim 4 wherein the hydroxy group of galanthamine or lycoramine is replaced by an alkoxy group of from one to six carbon atoms, hydrogen, an acyloxy group, a carbonate group or a carbamate group which may be a mono or dialkyl or an aryl carbamate or carbonate wherein the alkyl groups contain from 1 to 8 carbon atoms.

29. A method as claimed in claim 5 wherein the hydroxy group of galanthamine or lycoramine is replaced by an alkoxy group of from one to six carbon atoms, hydrogen, an acyloxy group, a carbonate group or a carbamate group which may be a mono or dialkyl or an aryl carbamate or carbonate wherein the alkyl groups contain from 1 to 8 carbon atoms.

30. A method as claimed in claim 6 wherein the hydroxy group of galanthamine or lycoramine is replaced by an alkoxy group of from one to six carbon atoms, hydrogen, an acyloxy group, a carbonate group or a carbamate group which may

be a mono or dialkyl or an aryl carbamate or carbonate wherein the alkyl groups contain from 1 to 8 carbon atoms.

31. A method as claimed in claim 4 wherein the compound employed is one wherein the hydroxyl group of galanthamine or lycoramine is replaced by an alkanoyl group of 2 to 7 carbon atoms, a mono or dialkyl carbamate of 1 – 8 carbon atoms per alkyl group, a mono or diaryl carbamate, an alkyl carbonate of one to six carbon atoms in its alkyl group or an aryl carbonate.

32. A method as claimed in claim 5 wherein the compound employed is one wherein the hydroxyl group of galanthamine or lycoramine is replaced by an alkanoyl group of 2 to 7 carbon atoms, a mono or dialkyl carbamate of 1 – 8 carbon atoms per alkyl group, a mono or diaryl carbamate, an alkyl carbonate of one to six carbon atoms in its alkyl group or an aryl carbonate.

33. A method as claimed in claim 6 wherein the compound employed is one wherein the hydroxyl group of galanthamine or lycoramine is replaced by an alkanoyl group of 2 to 7 carbon atoms, a mono or dialkyl carbamate of 1 – 8 carbon atoms per alkyl group, a mono or diaryl carbamate, an alkyl carbonate of one to six carbon atoms in its alkyl group or an aryl carbonate.

34. A method as claimed in claim 4 wherein the compound employed is one wherein the methoxy group of galanthamine or lycoramine is replaced by an alkoxy

group of two to six carbon atoms or a carbonate of from one to six carbon atoms an alkyl carbonate of one to six carbon atoms in its alkyl group or an aryl carbonate.

35. A method as claimed in claim 5 wherein the compound employed is one wherein the methoxy group of galanthamine or lycoramine is replaced by an alkoxy group of two to six carbon atoms or a carbonate of from one to six carbon atoms an alkyl carbonate of one to six carbon atoms in its alkyl group or an aryl carbonate.

36. A method as claimed in claim 6 wherein the compound employed is one wherein the methoxy group of galanthamine or lycoramine is replaced by an alkoxy group of two to six carbon atoms or a carbonate of from one to six carbon atoms an alkyl carbonate of one to six carbon atoms in its alkyl group or an aryl carbonate.

37. A method for treating neuromuscular dysfunction resulting from use of HMG-CoA reductase inhibitors by modulating nicotinic receptors by administering an effective amount of a nicotinic allosteric potentiator, nicotine, a nicotinic agonist or a mixture thereof to a patient in need of such modulation.